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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/045,269	11/07/2001	Yoshinori Tajima	08228/018001	2345

22511 7590 03/05/2003

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EXAMINER

SPITZER, ROBERT H

ART UNIT	PAPER NUMBER
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1724

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DATE MAILED: 03/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

mk-7

Office Action Summary

Application No.	Applicant(s)	
10/045,269	TAJIMA ET AL.	
Examiner	Art Unit	
Robert H. Spitzer	1724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s): _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

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The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 9 is indefinite because it recites "feed gas" without any correlation to "the at least one gas group" already recited as being sequentially supplied to the plurality of chromatographic columns in amended claim 1.

Claims 1,2 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over either EP 0,948,988 A or Wambach et al. (4,254,062) in view of either newly cited Karasek (3,121,321) or Mac,urtrie et al. ('3,550,429). The claims differ from the disclosure of either EP reference no. 0,948,988A or Wambach et al. ('062) in the chromatographic separation step being in a plurality of columns wherein the inlet contains a valve and the outlet from the columns contains multiple valves. Both Karasek ('321) and MacMurtrie et al. ('429) show the sequential addition of both the supply gas (sample) and the carrier gas to a plurality of parallel chromatography columns through a feed valve and a plurality of outlet valves for discharge from each column individually. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to structure the separation stage of either EP reference no. 0,948,988A or Wambach et al. ('062) to include a plurality of chromatographic columns in the separation stage or step operated so that they are used in parallel and including a

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plurality of outlet valves, in view of the showing of either Karasek ('321) or MacMurtrie et al. ('429), so that the components of interest are obtained in separate columns and so that multiple components can be removed from the feed gas stream.

Claims 3-8 and 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over either EP reference no. 0,948,988 A or Wambach et al. ('429) in view of either Karasek ('321) or MacMurtrie et al. ('429), as applied in the paragraph directly above, further in view of either one of the following EP references: 0,924,485 or 0,854,335 or 0,500,040. The claims differ from the modified disclosures of either EP reference no. 0,948,988A or Wambach et al. ('062) in the source of the gas mixture being a semiconductor processing device or process. All three EP references (0,92504,485, 0,854,335 and 0,500,040) show that gases from such a process can be purified before it is again reused. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to utilize the process and apparatus of either modified EP reference no. 0,948,988A or Wambach et al. ('062) for a feed gas which includes the components from a semiconductor processing plant or device, in view of the showing of either of the EP references 0,924,485 or 0,854,335 or 0,500,040, so that the components can be recycled to the process and so that pollutant gases are not discharged into the atmosphere.

Applicants arguments filed February 10, 2003 have been considered but are not persuasive for the following reasons. Applicants' main argument is that while the prior art references do show that chromatography columns can be used to separate the components from the specified feed gas mixture, they do not show the limitation added

to both independent claims 1 and 10 that the chromatographic columns have an inlet valve and a plurality of outlet valves so that such columns can be operated in parallel, instead of in series as shown. Applicants amendment to those claims include subject matter not previously claimed which required the Examiner to expand his search to include such series operated columns. Thus the newly cited and applied references to Karasek ('321) and MacMurtrie et al. ('429) have been added to the above rejections, as they clearly show that chromatographic columns can be operated in parallel flow with removal of components from each column separately through different discharge valves. Thus while the primary references do not show that operation of their chromatographs, the above two references do show such operation. It is the opinion of the Examiner that the operation of the simulated moving bed columns of the primary references as parallel columns would have been within the skill of one working in this art, as each type of system is known in the art and its advantages are also known. Any other remarks made by Applicants and not specifically commented on by the Examiner have been considered.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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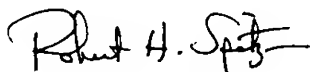
mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert H. Spitzer whose telephone number is 703-308-3794. The examiner can normally be reached on Monday-Thursday from 5:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Simmons, can be reached on (703) 308-1972 and the fax number for the organization where this application is assigned is 703-872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Robert H. Spitzer
March 3, 2003


Robert H. Spitzer
Primary Examiner
Art Unit 1724
March 3, 2003